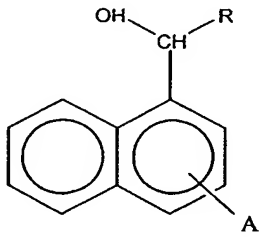
WHAT IS CLAIMED IS:

1. A method of treating cancer comprising administering to a patient in need thereof a therapeutically effective amount of a composition comprising a compound having the formula (I):



(I)

in which A represents from one to three groups selected from halogen and trifluoromethyl, and in which the quinoline ring is optionally further substituted by one or more other moieties, and R is *(a)* NR_1R_2 in which R_1 and R_2 are independently hydrogen or C_1-C_4 alkyl; *(b)* 2-piperidyl, *(c)* 2-pyridyl, and *(d)* 5-(ethyl or vinyl)-quinuclidin-4-yl; an enantiomer of such a compound; a pharmaceutically acceptable salt of such a compound or of an enantiomer thereof; a prodrug of such a compound or of an enantiomer thereof; a metabolite of such a compound or of an enantiomer thereof; and mixtures of two or more of the foregoing.

2. A method according to claim 1 in which A represents from one to three chloro or trifluoromethyl groups, and R is *(a)* NR_1R_2 in which R_1 and R_2 are independently hydrogen or C_3-C_4 alkyl; *(b)* 2-piperidyl, *(c)* 2-pyridyl, and *(d)* 5-(ethyl or vinyl)-quinuclidin-4-yl.

3. A method according to claim 1 in which the quinoline ring is further substituted by a methoxy, methyl, phenyl, halophenyl or trifluoromethyl group.

4. A method according to claim 1 in which the quinoline ring is substituted by from one to three groups selected from halogen and trifluoromethyl and is not further substituted.

5. A method according to claim 1 in which the compound is selected from mefloquine, enantiomers of mefloquine; prodrugs of mefloquine or of its enantiomers; metabolites of mefloquine or of its enantiomers; pharmaceutically acceptable salts of

mefloquine, of mefloquine enantiomers, of mefloquine prodrugs or of mefloquine metabolites, and mixtures thereof.

6. A method according to claim 1 in which the cancer is a cancer of the hematological system.

7. A method according to claim 1 in which the cancer is a cancer of the hematopoietic system.

8. A method according to claim 1 in which the cancer is selected from leukemias, myelomas and lymphomas.

9. A method according to claim 1 in which the cancer is a cancer that is in the form of a solid tumor.

10. A method according to claim 1 in which the cancer is selected from lung cancer, renal cancer, melanoma, breast cancer, colon cancer and ovarian cancer.

11. A method according to claim 1 in which the cancer is non-small lung cancer.

12. A method according to claim 1 in which the cancer is ovarian carcinoma.

13. A method according to claim 1 in which the cancer is melanoma.

14. A method according to claim 1 in which the cancer is colon cancer.

15. A method according to claim 1 in which the cancer is a leukemia.

16. A method according to claim 1 in which the cancer is chronic lymphocytic leukemia.

17. A method according to claim 1 comprising administering mefloquine to a patient.

18. A method according to claim 1 comprising administering an enantiomer of mefloquine to a patient.

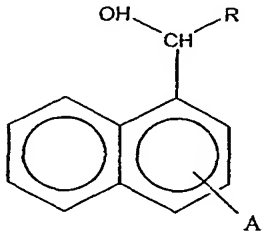
19. A method according to claim 1 comprising administering to a patient a prodrug of mefloquine or of a mefloquine enantiomer.

20. A method according to claim 1 comprising administering to a patient a metabolite of mefloquine or of a mefloquine enantiomer.

21. A method according to claim 1 comprising administering to a patient a salt of (a) mefloquine, (b) a mefloquine enantiomer, (c) a mefloquine prodrug or (d) a mefloquine metabolite.

22. A method according to claim 21 in which the therapeutically effective amount is an amount that will produce a blood concentration of mefloquine of 10μM or less.

23. A composition for treating cancer comprising (i) an effective amount of a compound having the formula (I):



(I)

in which A represents from one to three groups selected from halogen and trifluoromethyl, and in which the quinoline ring is optionally further substituted by one or more other moieties, and R is *(a)* NR_1R_2 in which R_1 and R_2 are independently hydrogen or C_1-C_4 alkyl; *(b)* 2-piperidyl, *(c)* 2-pyridyl, and *(d)* 5-(ethyl or vinyl)-quinuclidin-4-yl; an enantiomer of such a compound; a pharmaceutically acceptable salt of such a compound or of an enantiomer thereof; a prodrug of such a compound or of an enantiomer thereof; a metabolite of such a compound or of an enantiomer thereof; or a mixture of two or more of the foregoing, and (ii) a pharmaceutically acceptable carrier.

24. A composition according to claim 23 in which A represents from one to three chloro or trifluoromethyl groups, and R is *(a)* NR_1R_2 in which R_1 and R_2 are independently hydrogen or C_3-C_4 alkyl; *(b)* 2-piperidyl, *(c)* 2-pyridyl, and *(d)* 5-(ethyl or vinyl)-quinuclidin-4-yl.

25. A composition according to claim 23 in which the quinoline ring is further substituted by a methoxy, methyl, phenyl, halophenyl or trifluoromethyl group.

26. A composition according to claim 23 in which the quinoline ring is substituted by from one to three groups selected from halogen and trifluoromethyl and is not further substituted.

27. A composition according to claim 23 in which the compound is selected from mefloquine, enantiomers of mefloquine; prodrugs of mefloquine or of its enantiomers; metabolites of mefloquine or of its enantiomers; pharmaceutically acceptable salts of mefloquine, of mefloquine enantiomers, of mefloquine prodrugs or of mefloquine metabolites, and mixtures thereof.

28. A composition according to claim 23 that is in a form suitable for oral administration.

29. A kit for treating cancer comprising a composition according to claim 23.

30. A kit according to claim 29 in which A represents from one to three chloro or trifluoromethyl groups, and R is *(a)* NR_1R_2 in which R_1 and R_2 are independently hydrogen or C_3-C_4 alkyl; *(b)* 2-piperidyl, *(c)* 2-pyridyl, and *(d)* 5-(ethyl or vinyl)-quinuclidin-4-yl.

31. A kit according to claim 29 in which the quinoline ring is further substituted by a methoxy, methyl, phenyl, halophenyl or trifluoromethyl group.

32. A kit according to claim 29 in which the quinoline ring is substituted by from one to three groups selected from halogen and trifluoromethyl and is not further substituted.

33. A kit according to claim 29 in which the compound is selected from mefloquine, enantiomers of mefloquine; prodrugs of mefloquine or of its enantiomers; metabolites of mefloquine or of its enantiomers; pharmaceutically acceptable salts of mefloquine, of mefloquine enantiomers, of mefloquine prodrugs or of mefloquine metabolites, and mixtures thereof.